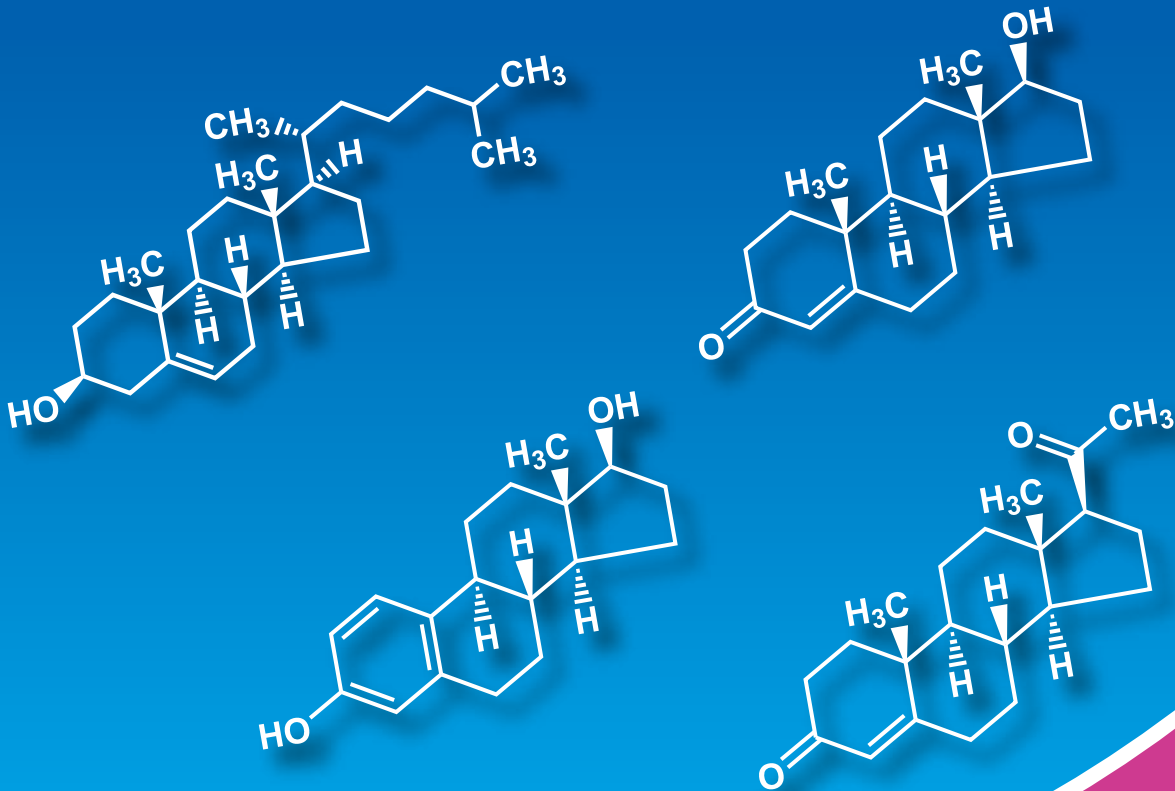


# Steroids



Estranes

Androstanes

Pregnanes

Cholanes

Cholestanes

Phytosteroids

Steroid Glycosides

# Steroids

Steroids are compounds consisted of four fused rings, for example, the most common and best known steroid in humans, cholesterol. In animals, steroids are biosynthesized from lanosterol and are widely distributed. The distinctive feature in steroids is lack of methyl group at C-4 position as compared to terpenes. In this section, we have classified steroids into five basic categories based upon their chemical composition (Fig.1).

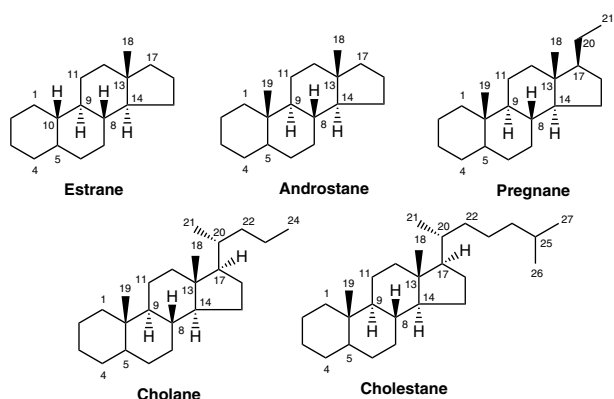


Figure 1. Typical chemical structure of steroids

## ● Steroid Hormones:

### Estranes, Androstanes, Pregnanes

Certain kinds of steroids like estrogens, androstanes and pregnanes can act as hormones, their activities being closely related to their structures (Table 1). Pregnane-type steroids can be classified into corticoids and progestogens based on their bioactivities. Their classification and the typical compounds in each category are illustrated as follows:



Hormones	Synonym	Typical Compound	Structure
Estrogen	Female Sex Hormone	Estradiol	Estrane Type
Androgen	Male Sex Hormone	Testosterone	Androstane Type
Corticoid	Adrenocorticotropic Hormone	Cortisone	Pregnane Type 
Progestogen	Gestagene	Progesterone	Pregnane Type 

Table 1. Classification of steroid hormones

**Estrogens:** Estrogens function as the primary female sex hormone and in combination with synthetic progestogens can be used as oral contraceptives to suppress ovulation. Recently, it is also reported that they are effective for the prevention of osteoporosis, heart attacks and Alzheimer's disease in women.

**Androgens:** Testosterone is not only the principal and most well known male sex hormone but is also known to exert anabolic effects. This is also the main reason why some of them have been banned from use as bone density enhancers and muscle-building drugs by several sports organizations. They are also the intermediates of estrogen biosynthetic pathway or rather the precursors of all estrogens.

**Progestogens:** The only naturally occurring progestogen, i.e., progesterone, exhibits antioviulatory action. Based on its structure, derivatives of 19-nortestosterone were synthesized and can be used as oral contraceptives.

**Corticoids:** Synthetic corticoids such as dexamethasone and prednisolone find clinical use as anti-inflammatory agents. They are synthetically developed based on the structure of cortisone, a natural corticoid.

## WARNING

Some of the steroid hormones may cause serious physiological actions. To avoid inhalation and contacting with skin, wear protective goggles, mask and eyeglasses when handling. Sufficient caution should be taken, when using these compounds, from the opening up to the disposal of the reagents.

## ● Bile Acids: Cholanes

Cholane type steroids are predominantly found in the bile. Cholic acid and its derivatives exist in bile as the major component as conjugates of glycine and taurine. Since conjugated cholates are amphiphilic, they assist in the digestion and absorption of lipids in small intestine. This characteristic is also exploited also in its use as a surfactant.

## ● Cholesterol: Cholestanes

Cholesterol possesses a cholestane-type skeleton and in conjugation with fatty acids, it forms the main component of cell membranes in animals and microorganisms. These cholesterol conjugates establish and maintain proper membrane permeability. In addition, it is a precursor of steroids as mentioned above and also exists in its liberated form in organisms.

## ● Phytosteroids, Steroid Glycosides, Other Steroids

Steroids of plant origin have different biosynthetic pathways: they are synthesized from cycloartenol. They possess structural features distinct from animal steroids, for instance, a characteristic alkyl side-chain at C-24. Steroid glycosides and their aglycones are also listed in this section.

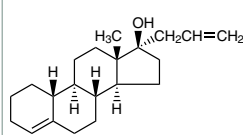
All TCI's chemicals are for testing or research purposes only.

## Reference

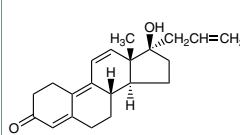
P. M. Dewick, in *Medicinal Natural Products*, 3rd ed., John Wiley & Sons, Chichester, **2009**, pp. 247-298.

## Estranes

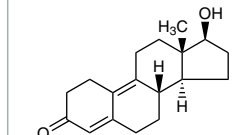
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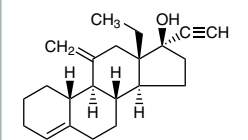
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Altrenogest  
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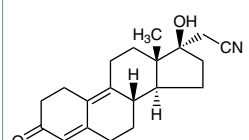
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9(10)-Dehydronandrolone  
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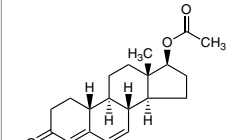
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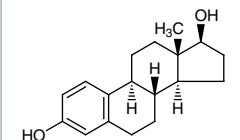
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Dienogest  
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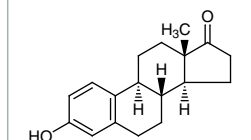
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6-Dehydronandrolone Acetate  
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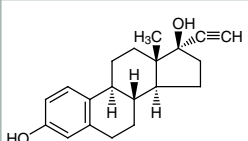
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β-Estradiol  
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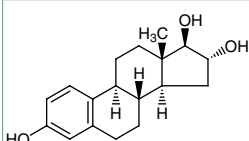
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Estrone  
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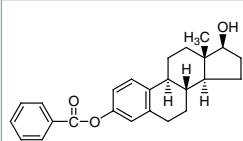
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Ethynylestradiol  
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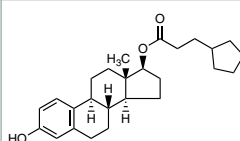
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Estriol  
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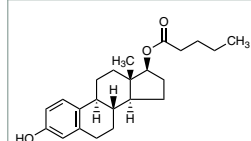
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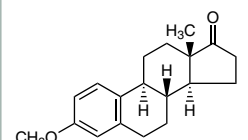
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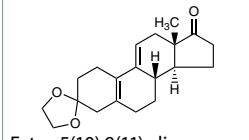
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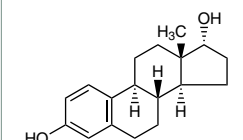
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Estrone 3-Methyl Ether  
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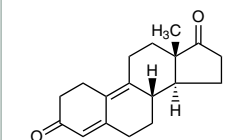
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Estra-5(10),9(11)-diene-3,17-dione 3-Ethylene Ketal  
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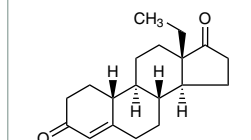
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α-Estradiol  
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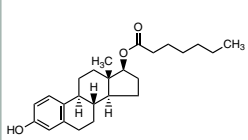
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Estra-4,9-diene-3,17-dione  
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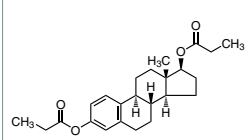
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Ethylgonendione  
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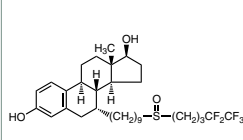
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β-Estradiol 17-Heptanoate  
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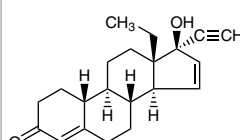
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Estradiol Dipropionate  
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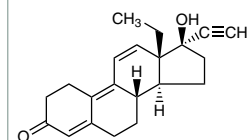
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Fulvestrant  
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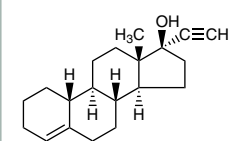
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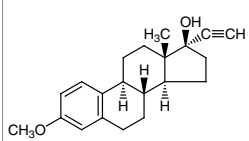
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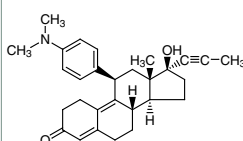
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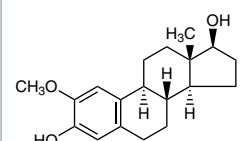
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Mestranol  
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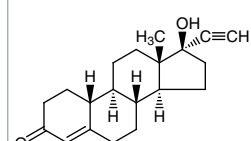
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Mifepristone  
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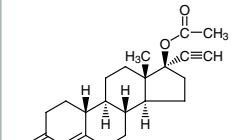
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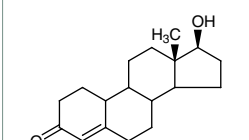
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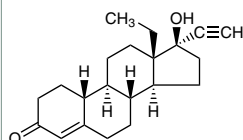
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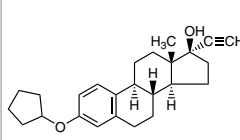
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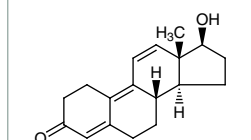
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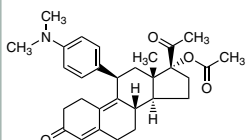
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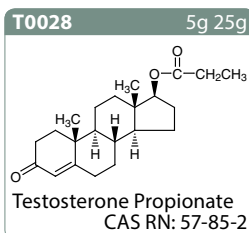
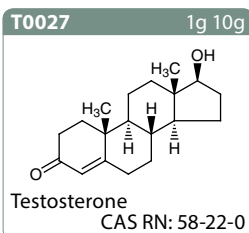
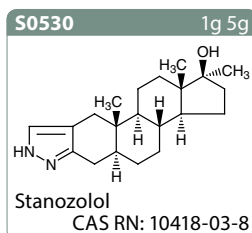
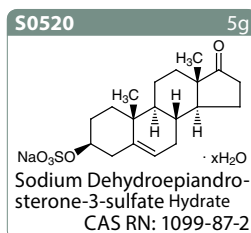
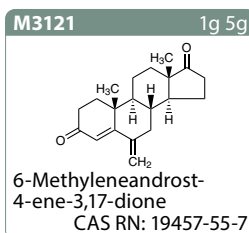
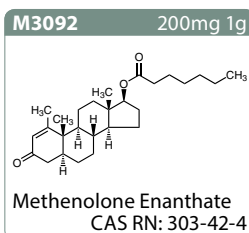
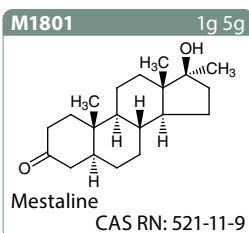
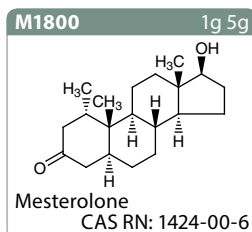
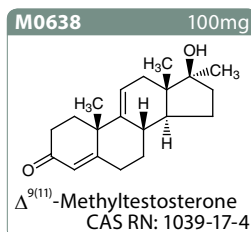
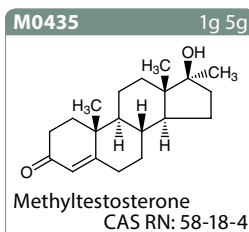
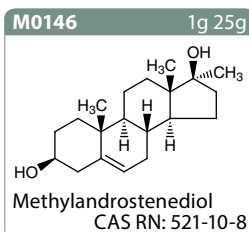
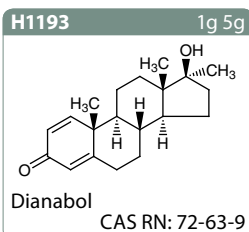
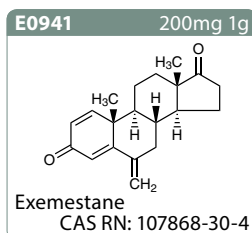
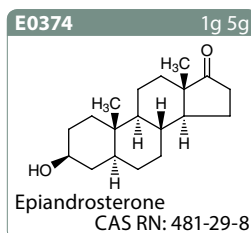
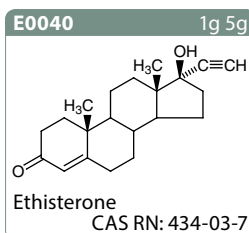
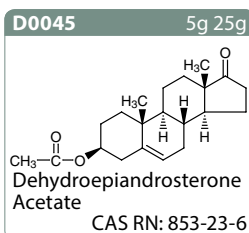
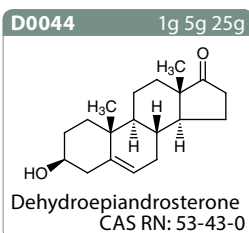
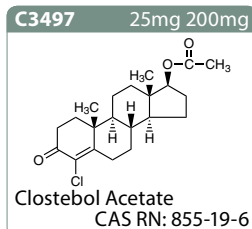
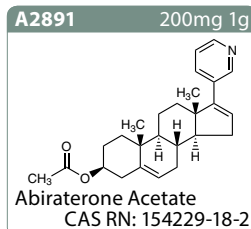
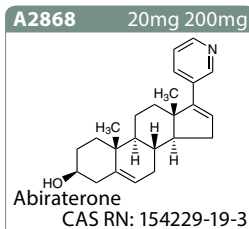
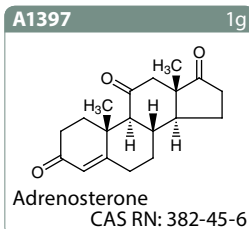
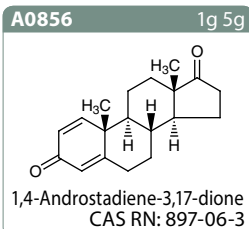
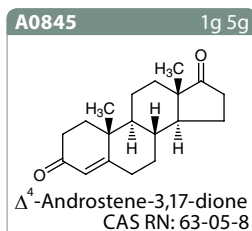
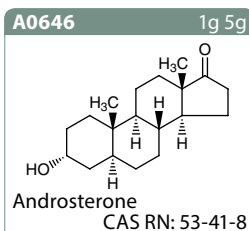
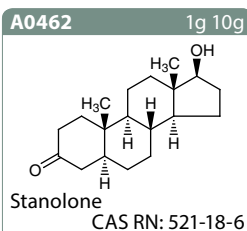
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Trenbolone  
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U0102 50mg 250mg

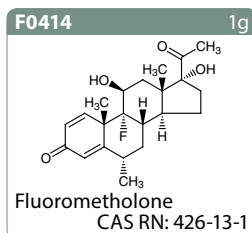
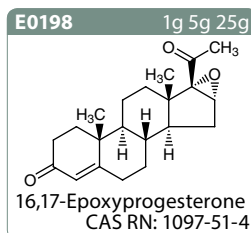
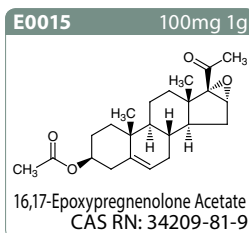
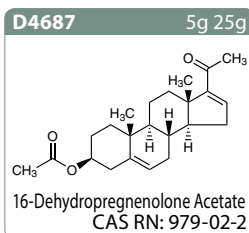
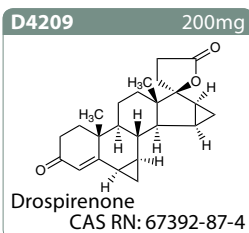
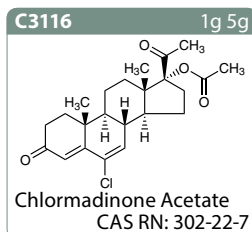
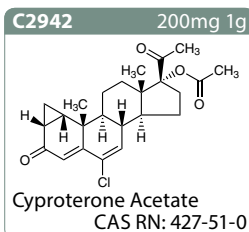
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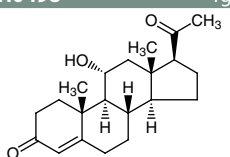
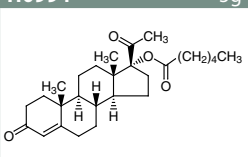
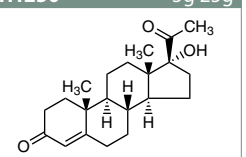
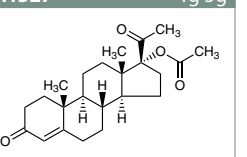
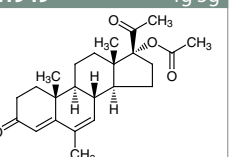
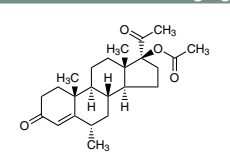
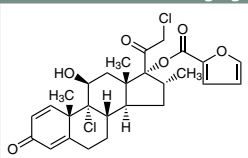
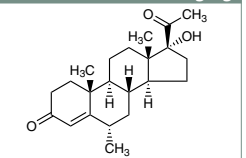
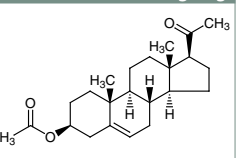
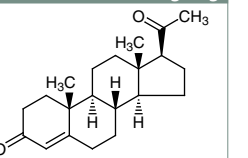
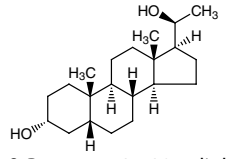
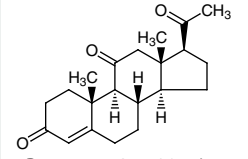
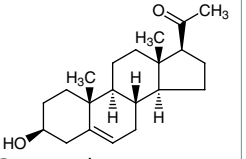
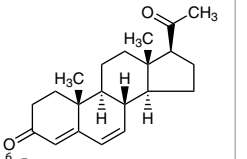
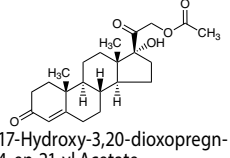
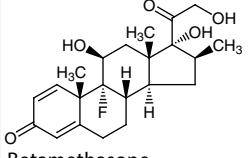
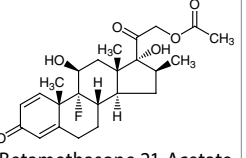
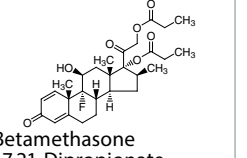
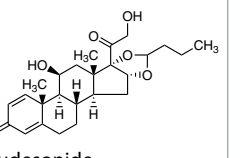
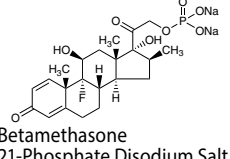
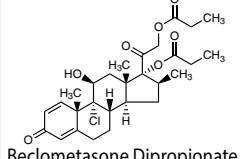
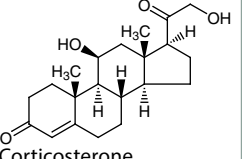
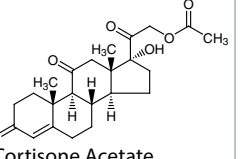
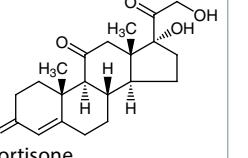
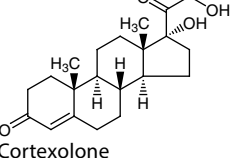
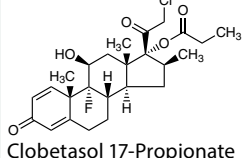
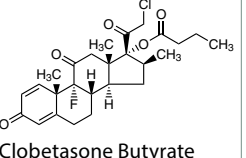
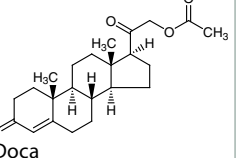
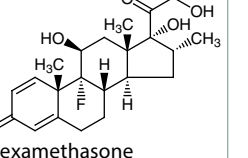
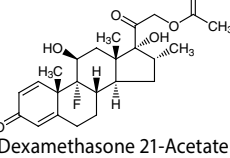
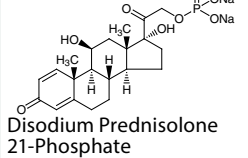

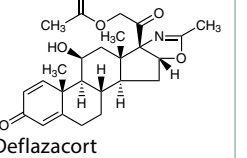
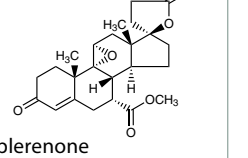
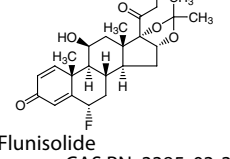
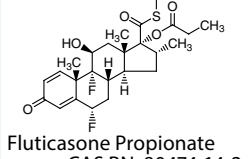
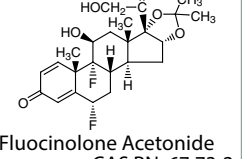
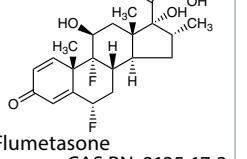
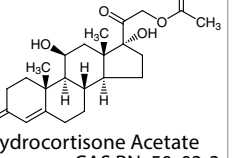
## Androstanes



## Pregnanes

## Progestogen

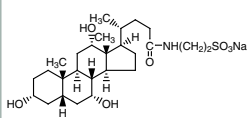


<p><b>H0498</b> 1g</p>  <p><b>11α-Hydroxyprogesterone</b> CAS RN: 80-75-1</p>	<p><b>H0994</b> 5g</p>  <p><b>17α-Hydroxyprogesterone Caproate</b> CAS RN: 630-56-8</p>	<p><b>H1250</b> 5g 25g</p>  <p><b>17α-Hydroxyprogesterone</b> CAS RN: 68-96-2</p>	<p><b>H1527</b> 1g 5g</p>  <p><b>17α-Hydroxyprogesterone Acetate</b> CAS RN: 302-23-8</p>	<p><b>M1949</b> 1g 5g</p>  <p><b>Megestrol Acetate</b> CAS RN: 595-33-5</p>
<p><b>M1964</b> 1g 5g</p>  <p><b>Medroxyprogesterone Acetate</b> CAS RN: 71-58-9</p>	<p><b>M2354</b> 200mg 1g</p>  <p><b>Mometasone Furoate</b> CAS RN: 83919-23-7</p>	<p><b>M3113</b> 1g 5g</p>  <p><b>Medroxyprogesterone</b> CAS RN: 520-85-4</p>	<p><b>P0477</b> 1g 10g</p>  <p><b>Pregnenolone Acetate</b> CAS RN: 1778-02-5</p>	<p><b>P0478</b> 5g 25g</p>  <p><b>Progesterone</b> CAS RN: 57-83-0</p>
<p><b>P0678</b> 100mg 1g</p>  <p><b>5β-Pregnane-3α,20α-diol</b> CAS RN: 80-92-2</p>	<p><b>P0771</b> 1g</p>  <p><b>4-Pregnene-3,11,20-trione</b> CAS RN: 516-15-4</p>	<p><b>P0786</b> 5g 25g</p>  <p><b>Pregnenolone</b> CAS RN: 145-13-1</p>	<p><b>P2623</b> 1g 5g</p>  <p><b>Δ<sup>6</sup>-Progesterone</b> CAS RN: 1162-56-7</p>	<p><b>Corticoids</b></p>
<p><b>A3212</b> 1g 5g</p>  <p><b>17-Hydroxy-3,20-dioxypregn-4-en-21-yl Acetate</b> CAS RN: 640-87-9</p>	<p><b>B1837</b> 1g 5g</p>  <p><b>Betamethasone</b> CAS RN: 378-44-9</p>	<p><b>B3165</b> 1g 5g</p>  <p><b>Betamethasone 21-Acetate</b> CAS RN: 987-24-6</p>	<p><b>B3166</b> 1g 5g</p>  <p><b>Betamethasone 17,21-Dipropionate</b> CAS RN: 5593-20-4</p>	<p><b>B3909</b> 200mg 1g</p>  <p><b>Budesonide</b> CAS RN: 51333-22-3</p>
<p><b>B4110</b> 1g</p>  <p><b>Betamethasone 21-Phosphate Disodium Salt</b> CAS RN: 151-73-5</p>	<p><b>B4464</b> 1g 5g</p>  <p><b>Beclomethasone Dipropionate</b> CAS RN: 5534-09-8</p>	<p><b>C0388</b> 100mg 1g 5g</p>  <p><b>Corticosterone</b> CAS RN: 50-22-6</p>	<p><b>C0389</b> 1g 5g 25g</p>  <p><b>Cortisone Acetate</b> CAS RN: 50-04-4</p>	<p><b>C1317</b> 1g 10g</p>  <p><b>Cortisone</b> CAS RN: 53-06-5</p>
<p><b>C1478</b> 1g</p>  <p><b>Cortisolone</b> CAS RN: 152-58-9</p>	<p><b>C2612</b> 1g 5g</p>  <p><b>Clobetasol 17-Propionate</b> CAS RN: 25122-46-7</p>	<p><b>C3510</b> 50mg 250mg 1g</p>  <p><b>Clobetasone Butyrate</b> CAS RN: 25122-57-0</p>	<p><b>D0047</b> 1g</p>  <p><b>Doca</b> CAS RN: 56-47-3</p>	<p><b>D1961</b> 1g</p>  <p><b>Dexamethasone</b> CAS RN: 50-02-2</p>
<p><b>D3628</b> 1g 5g</p>  <p><b>Dexamethasone 21-Acetate</b> CAS RN: 1177-87-3</p>	<p><b>D3918</b> 5g</p>  <p><b>Disodium Prednisolone 21-Phosphate</b> CAS RN: 125-02-0</p>	<p><b>D4438</b> 250mg 1g</p>  <p><b>Dexamethasone 21-Phosphate Disodium Salt Hydrate</b> CAS RN: 2392-39-4</p>	<p><b>D4523</b> 1g 5g</p>  <p><b>Deflazacort</b> CAS RN: 14484-47-0</p>	<p><b>E0905</b> 200mg</p>  <p><b>Eplerenone</b> CAS RN: 107724-20-9</p>
<p><b>F0437</b> 1g</p>  <p><b>Flunisolide</b> CAS RN: 3385-03-3</p>	<p><b>F0525</b> 100mg</p>  <p><b>Fluticasone Propionate</b> CAS RN: 80474-14-2</p>	<p><b>F0657</b> 1g 5g</p>  <p><b>Fluocinolone Acetonide</b> CAS RN: 67-73-2</p>	<p><b>F0945</b> 200mg 1g</p>  <p><b>Flumetasone</b> CAS RN: 2135-17-3</p>	<p><b>H0184</b> 1g 5g</p>  <p><b>Hydrocortisone Acetate</b> CAS RN: 50-03-3</p>



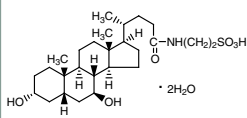


T0808 1g 5g 25g



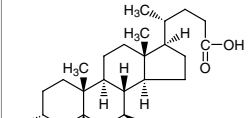
Sodium Taurocholate  
from Bovine Bile  
CAS RN: 145-42-6

T1567 1g 5g



Tauroursodeoxycholic  
Acid Dihydrate  
CAS RN: 14605-22-2

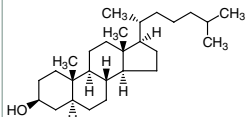
U0030 5g 25g



Ursodeoxycholic Acid  
CAS RN: 128-13-2

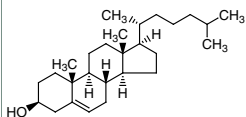
## Cholestanes

C0317 25g



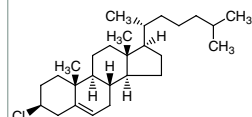
$\beta$ -Cholestanol  
(contains  $\alpha$ -Cholestanol)  
CAS RN: 80-97-7

C0318 25g 100g 500g



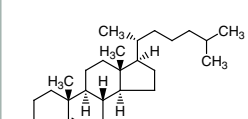
Cholesterol  
(stabilized with  $\alpha$ -Tocopherol)  
CAS RN: 57-88-5

C0610 25g



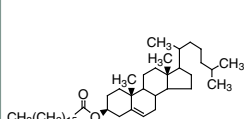
Cholesteryl Chloride  
CAS RN: 910-31-6

C0695 10g



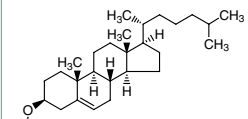
Cholesteryl Bromide  
CAS RN: 516-91-6

C0950 5g 25g



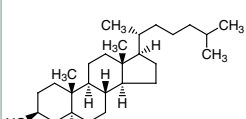
Cholesterol Margarate  
CAS RN: 24365-37-5

C1025 1g



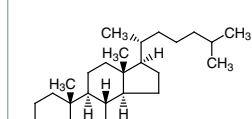
Cholesterol Lauryl Carbonate  
CAS RN: 15455-85-3

C1222 1g



Cholesterol-5 $\alpha$ ,6 $\alpha$ -epoxide  
CAS RN: 1250-95-9

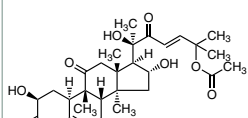
C1366 5g



(+)-4-Cholesten-3-one  
CAS RN: 601-57-0

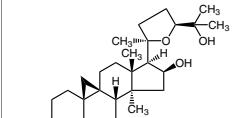
## Phytosteroids

C3442 5mg 25mg



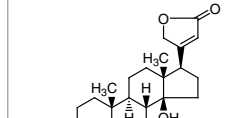
Cucurbitacin B  
CAS RN: 6199-67-3

C3469 25mg 100mg



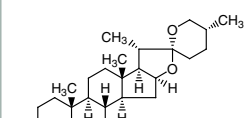
Cycloastragenol  
CAS RN: 78574-94-4

D0541 10mg



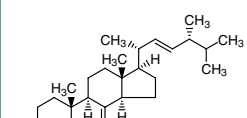
Digitoxigenin  
CAS RN: 143-62-4

D1474 1g 10g



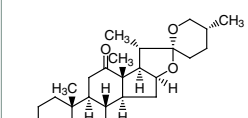
Diosgenin  
CAS RN: 512-04-9

E0018 5g 25g



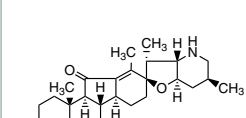
Ergosterol  
CAS RN: 57-87-4

H0003 100mg 1g



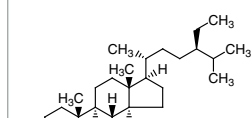
Hecogenin  
CAS RN: 467-55-0

J0009 10mg



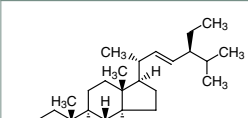
Jervine  
CAS RN: 469-59-0

S0040 25g



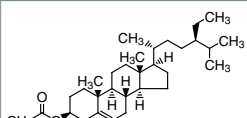
$\beta$ -Sitosterol (contains Campesterol)  
CAS RN: 83-46-5

S0088 1g 5g 25g



Stigmasterol  
CAS RN: 83-48-7

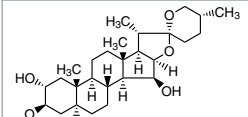
S0221 1g 5g



$\beta$ -Sitosterol Acetate  
(contains Campesterol Acetate)  
CAS RN: 915-05-9

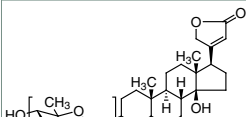
## Steroid Glycosides

D0540 100mg



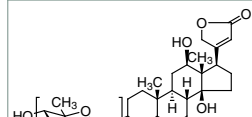
Digitonin  
CAS RN: 11024-24-1

D0542 100mg



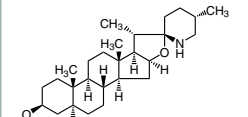
Digitoxin  
CAS RN: 71-63-6

D1828 100mg 1g



Digoxin  
CAS RN: 20830-75-5

T3636 100mg



Tomatine from Tomato  
CAS RN: 17406-45-0

